

REMARKS

Applicants have cancelled claims 16-18 and amended claim 1 to overcome a claim objection. Applicants have also amended claims 1, 2, 5, 6, 11 and 12 to remove the limitation that the protection film comprises an organic resin to expand the scope of the claims. Claim 9 has been amended to recite this limitation of the protection film, and claim 10 has been amended to reflect these amendments. New claims 19-23 have been added.

Claim 1 has been objected to because of an informality. This objection is overcome by the amendment.

Applicants thank the Examiner for allowing claims 2, 3, 6, 7, 12, 13 and 15.

Claims 16-18 have been rejected under 35 USC 112, second paragraph, as indefinite. Claims 16-18 have been also rejected under 35 USC 102(e) as anticipated by the Background of the Invention section of this application. These rejections are moot in light of the cancellation of claims 16-18.

Claims 1, 4, 5, 8-11 and 14 have been rejected under 35 USC 103(a) as unpatentable over the Background section in view of U.S. Patent No. 6,753,936 (Tanaka). Applicants respectfully traverse this rejection.

Claim 1 recites forming a protection film on a surface of the second wiring by spray coating. The claimed second wiring is connected to a portion of the first wiring formed on the top surface of the semiconductor wafer and exposed in the groove formed in the semiconductor wafer. Applicants have found that the conventional resin film forming technique, i.e., spin coating, tends to form a lump of resin at the bottom of the groove, and the lumped resin makes the wafer curl up when it hardens. See, for example, page 2, lines 21-28, of the specification. To overcome this problem, the claimed manufacturing method relies on a spray coating, rather than the conventional spin coating.

The Examiner admits that the Background section does not teach or suggest the claimed spray coating of the protection film. To overcome this deficiency of the Background section, the Examiner relies on Tanaka. However, all the Examiner can find as evidence for the necessary

teaching is the disclosure of Tanaka at column 13, lines 27-31 that “there is preferably provided a protection layer 119C consisting of a coated film such as acrylic resin … etc. This coating preferably is performed by roll-coating, photogravure coating, or spray coating.” This disclosure does not correspond to the invention.

Tanaka’s protection layer 119C, which the Examiner equates to the claimed protection film, is formed on a plastic base member film 118A that is part of rotating belt 118 for reflecting light that passes through liquid crystal cell 112. See, for example, column 11, lines 10-20, and column 12, lines 40-54, of Tanaka. All Tanaka discloses is that a protection layer is provided on a flat plastic belt by spray coating.

Persons of ordinary skill in the art would have understood that spin coating is the most efficient and established wet technique to form a film on a flat surface of a semiconductor wafer and that unless some serious flaws or inconveniences are identified, spin coating is not to be replaced by another coating method in the processing of semiconductor wafers. Applicants have found that the resin lump formation at the bottom of the grooves results in a curling up of the wafer that leads to the formation of defective devices, as explained above. Because Tanaka’s spray coating has nothing to do with film formation on a semiconductor wafer, Tanaka does not disclose any flaw or inconvenience in the conventional spin coating method described in the Background section which is serious enough to discard the established spin coating method in favor of Tanaka’s spray coating.

The Examiner contends that persons of ordinary skill in the art would have been motivated to replace the spin coating of the Background section with Tanaka’s spray coating because “spray coating is easy to control and well coated with even surface.” Applicants respectfully disagree with the Examiner because it is the spin coating, not the spray coating as the Examiner contends, that is easy to control and good for coating on a flat semiconductor surface, as explained above. Accordingly, the mere fact that a spray coating is available, without more, would not have motivated persons of ordinary skill in the art to replace the Background section’s

spin coating with Tanaka's spray coating. Claims 5 and 11 recite the same formation of the protection film by spray coating.

The rejection of claims 1, 4, 5 8-11 and 14 under 35 USC 103(a) over the Background section and Tanaka should be withdrawn because the Examiner failed to provide evidence of motivation that conventional spin coating must be replaced with spray coating as claimed.

New claim 19 finds support, for example, at page 7, lines 7-17, of the specification.

In light of the above, a Notice of Allowance is solicited.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952**, referencing Docket No. **492322014500**.

Respectfully submitted,

Dated:

June 24, 2005

By:


Barry E. Bretschneider
Registration No. 28,055

Morrison & Foerster LLP
1650 Tysons Boulevard, Suite 300
McLean, VA 22102-3915
Telephone: (703) 760-7743
Facsimile: (703) 760-7777